DEVICE FOR RETRIEVING A GOLF BALL

Technical Field of the Invention

The present invention relates to a device for retrieving a golf ball, said device comprising a shaft and means, at one end of the shaft, that is able to hold the golf ball, said means comprising a generally annular element. The device is intended to be used when the golf ball is located at an inaccessible place. The invention also relates to a holding means per se.

Prior Art

From US-A-3,273,927 a ball retriever is previously known, said ball retriever comprising two loops that generally are oriented in two planes that are perpendicular to each other. One loop is essentially smaller than the other loop, the smaller loop being provided inside the lager loop. When receiving a golf ball in the larger loop the shape of the loop is deformed and adjusts to the shape of the golf ball. The smaller loop also abuts the periphery of the ball. The ball is held inside the larger loop by means of friction.

From US-A-4,136,901 a ball retriever is previously known where the means for holding a golf ball comprises two stationary arms that between themselves define a space for receiving a golf ball, and a pivotable ring that in a lowered position cooperates with the arms to hold a golf ball. The unit that is equipped with the means to hold a golf ball is pivotally connected to a shaft that preferably is telescopic.

Objects and Features of the Invention

A primary object of the present invention is to present a device of the type defined above, said device structurally being extremely simple.

A further object of the present invention is that it should be extremely user-friendly.

Still an object of the present invention is that it should be environment friendly, i.e. manufactured from a material that could be recycled.

At least the primary object of the present invention is realised by means of a device that has been given the features of the appending independent claim 1. Preferred embodiments of the invention are defined in the dependent claims.

Brief Description of the Drawings

Below preferred embodiments of the device according to the present invention will be described, reference being made to the enclosed drawings, where:

Fig 1 shows a perspective view of the device according to the present invention;

Fig 2 shows a side view of the holding means included in the device according to the invention;

Fig 3 shows a top view of the holding means according to figure 2;

Fig 4 shows a perspective view of the holding means according to figure 2;

Fig 5 shows in a perspective view how the device according to the present invention is located relative to a golf ball that is being retrieved;

Fig 6 shows in a perspective view how the holding means of the device according to the present invention is being engaged with a golf ball;

Fig 7 shows in a side view how the holding means is engaged with a golf ball;

Fig 8 shows a top view of the holding means in the position according to figure 7;

Fig 9 shows a perspective view of a rotated position of the holding means that is engaged with a golf ball; and

Fig 10 shows a perspective view of an alternative embodiment of a device according to the present invention, the device being used for retrieving a golf ball from a cup in a green.

Detailed Description of Preferred Embodiments of the present invention

The device according to the present invention, shown in figure 1, comprises a telescopic shaft 1 that at one end carries a holding means 3 that in figure 1 is about to be

lowered over a golf ball B to retrieve said golf ball B. The user is gripping the shaft 1 at the end remote from the holding means 3.

The holding means 3, shown in figures 2-4, comprises a carrier 5 that comprises a sleeve shaped portion 6 that is pushed on to the shaft 1 and fixed relative to the shaft 1 in a suitable way. An annular wire 7 is stationary supported by the carrier 5, the ends of said annular wire 7 being fastened in the carrier 5. The holding means 3 also comprises a first tongue 9 of flexible material, said first tongue 9 being attached to the carrier 5, between the ends of the wire 7 that are fastened to the carrier 5. As is evident from figures 2-4 the first tongue 9 projects from the carrier 5 into the space that is defined by be annular wire 7. Generally, the first tongue 9 is located in the same plane as the annular wire 7 is located in. The material of the first tongue 9 is suitably polyurethane.

The embodiment of the holding means 3, shown in figures 2-4, also comprises a second tongue 10 of a rigid material, preferably metal, said second tongue 10 being pivotally connected to the carrier 5. In order to effect this the second tongue 10 has a crowned attachment portion 11 that extends around the carrier 5. The parts of the attachment portion 11 that are located on opposite sides of the carrier 5 are penetrated by a pin 12, around which the second tongue 10 may pivote. The parts of the attachment portion 11 that are located at opposite sides of the carrier 5 abut the carrier 5 by a certain pre-stress, and hence the friction between the carrier 5 and the attachment portion 11 must be overcome when pivoting the second tongue 10 around the pin 12.

In the position shown in figures 2 and 3 the second tongue 10 has an extension parallel to the annular wire 7, this being a so-called inactive position, in which the ball retriever easily may be inserted into for instance a golf bag without there being a risk for the second tongue 10 to hook into surrounding objects. In figure 4 the second tongue 10 is shown in erected position while the folded inactive position is illustrated by dotted lines. At maximally erected position

of the second tongue 10 a part of the attachment portion 11 will abut the carrier 5.

The attachment of the first tongue 9 to the carrier 5 is such that the first tongue 9 is more easily deflected in direction towards the second tongue 10. This is effected by having the flexible tongue 9 to abut a supporting means 8 at the side of the tongue 9 remote from the second tongue 10, this being indicated by a dotted line in figures 3, 5 and 6. On the side of the first tongue 9 that faces the second tongue 10 there is no supporting means, which means that the first tongue 9 more easily may be deflected in direction towards the second tongue 10.

In figures 5-9 it is illustrated how the device according to the present invention is used. As is evident from figure 5 the second tongue 10 is transferred to erected position before the holding means 3 is activated. Figure 6 illustrates how the annular wire 7 of the holding means 3 has been lowered over the golf ball B so far that the largest diameter of the golf ball B has been bypassed, this of course meaning that the internal diameter of the annular wire 7 being somewhat larger than the diameter of the golf ball B. This is also the illustrated in a side view in figure 7. In connection therewith the first tongue 9 has been deflected in direction towards the second tongue 10 and then assumed the position shown in figure 7. This deflection of the first tongue 9 is effected without any substantial counter-action since the first tongue 9 has no support on the side that faces towards the second tongue 10. When the holding means 3 has assumed the position shown in figure 7 the golf ball B abuts on one hand against the annular wire 7 and on the other hand against the first tongue 9 of flexible material. These areas of contact are generally located in the plane of the paper in figure 7 and perpendicular to the plane of the paper in figure 8, however **not** diametrically relative to the golf ball B. When studying figure 7 it is realised that the forces applied to the golf ball B by the annular wire 7 and the first tongue 9 respectively brings about that the golf ball B remains in the position shown in figures 7 and 8 relative to the holding means 3 when said holding means 3 is elevated. In this

connection it should be mentioned that the first tongue 9 is manufactured from a flexible material, said material however having an relatively high stiffness, which means that the first tongue 9 is not deflected to any degree worth mentioning in the position shown in figures 7 and 8. It should also be pointed out that the annular wire 7 defines an opening that has a fixed shape, i.e. the shape of the opening is not changed when using the device according to the present invention.

As is evident from the description above the device according to the present invention may elevate the ball B in the position of the holding means 3 that is shown in figure 7. In such a case the first, flexible tongue 9 is supported by the supporting means 8, see figure 8, said supporting means 8 being located on the side of the first tongue 9 that faces away from the second tongue 10. This means that the tongue 9, together with the annular wire 7, supports the golf ball B at two opposite areas of contact, said areas of contact however not being located diametrically relative to the golf ball B. However, in connection with such an elevation it may happen that the golf ball B is subjected to a force directed downwards. This may for instance happen if the golf ball B is located in a dense shrubbery and the ball for instance contacts a branch in connection with the elevation of the holding means 3. If this downward directed force is sufficiently large the golf ball B may be displaced downwards relative to the annular wire 7 and the first tongue 9, which means that the engagement between the holding means 3 and the golf ball B ceases and the golf ball B again hits the ground. In order to avoid this scenario the holding means 3 may be rotated in direction of the arrow P in figure 9, which means that the second tongue 10 is located at the lower side of the golf ball B, i.e. the second tongue 10 carries the golf ball B together with the annular wire 7. Since the second tongue 10 is manufactured from a rigid material the engagement between the holding means 3 and the golf ball B will not cease even if the golf ball B is subjected to relatively large forces directed downwards.

When a golf ball B, having an inaccesible position, has been retrieved by the device according to the present invention the golf ball B and the holding means 3 are separated from each other by urging the golf ball B through the annular wire 7 in direction away from the second tongue 10. The device according to the present invention is then ready to be used again, alternatively the holding means 3 is transferred to inactive position, i.e. the second tongue 10 is folded to the position according to figures 2 and 3.

In figure 10 an alternative embodiment of the device according to the present invention is shown. In connection therewith a holding means 3 is attached to the free end of a shaft 101 of a golf club, preferably a putter. In figure 10 it is illustrated how the holding means 3 may be used to retrieve a golf ball B from a cup C in a golf green. The holding means 3 may in principle be identical with the holding means 3 described above, and hence the same reference numeral has been used. The holding means 3 in figure 10 is mounted on a spigot that is attached to the free end of the shaft 101 of a golf club. Since the holding means 3 is used subsequent to the entering of the golf ball B into the cup C it is suitable that the holding means 3 is mounted on the putter, this in most cases being the club that is used for entering the golf ball B into the cup C.

when the golf ball B is to be retrieved from the cup C the user lowers the holding means 3, the second tongue 10 in a usual way assuming an erected position. The user then enters the annular wire 7 over the golf ball B and the golf ball B is urged against the wall of the hole. In a corresponding way as described above the annular wire 7 and the flexible tongue 9 will establish an engagement with the golf ball B. In a corresponding way as described above the holding means 3 may then be rotated to have the second tongue at the lower side of the golf ball B, and then the golf ball B may be elevated out of the cup C. The golf ball B is separated from the holding means 3 in a corresponding way as described above.

Feasible Modifications of the Invention

In the embodiment described above of the invention the holding means 3 comprises a generally annular wire 7. However, within the scope of the invention it is also feasible that the annular wire is exchanged for an annular element that for instance is punched from a relatively thin sheet metal. In connection therewith the annular element preferably has a somewhat larger dimension in radial extension than in axial extension.

In the embodiment described above of the holding means 3 the annular wire 7 is generally circular and it has shown suitable that the wire should be provided with a small bulging in the portion facing away from the first tongue 9. Thereby, the possibility is improved to handle balls having somewhat different diameter. However, within the scope of the present invention it is also feasible to have further alternative shapes of the annular wire. In exemplifying and non-restricting purpose rectangular and triangular may be mentioned. This is of course also valid if the annular wire is replaced by an annular element. As regards the function of the holding means 3 it is important that one or more areas of contact are established between the wire and the golf ball B in the position where the first tongue 9, of a flexible material, assumes an active position and abuts the golf ball B. These areas of contact are then located at opposite sides (however not diametrically) of the golf ball B relative to the first tongue 9 of flexible material.

In connection with the present invention it should thus be pointed out that by the expression "annular" a closed element is understood that not necessarily is circular.

In the embodiment described above of the holding means 3 a second tongue 10 of rigid material is included. However, the holding means may be void of the second tongue 10 in its most simple design. The holding means may exert an elevating function upon a golf ball only by the cooperation between the annular wire 7 and the first tongue 9 of flexible material. The disadvantage of this simple design of the holding means is that it may not be rotated as regards the longitudinal axis of the shaft 1; 101.

In the embodiment described above the carrier 5 is equipped with a sleeve shaped portion 6 that enables mounting of the carrier 5 on a shaft 1; 101. This may either be effected by direct attachment of the sleeve shaped portion 6 to the shaft 1 or that the shaft 101 is equipped with a spigot, on which the sleeve shaped portion 6 is mounted. However, within the scope of the invention it is also feasible that the mounting of the carrier on the shaft is effected in alternative ways, e.g. by means of some kind of quick coupling. Thereby, the same holding means may in a quick and simple way be moved from a first shaft 1 to a second shaft 101.